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fresh twigs. But while in the latter the absorbed gas can be driven off tolerably rapidly by oxygen, hydrogen, or nitrogen, this happens in the first just as in the case of carbon, only more slowly."

BOTANICAL NOTES FROM RECENT PERIODICALS. — *Flora.* Batalin, Mechanism of the Movements in Insect-Eating Plants (not yet finished). Dr. Celakovsky, On the Morphological Structure of *Vincetoxicum* and *Asclepias.* A. Poulsen, The Occurrence of Crystals surrounded by Cellulose (Rosanoff's crystals detected in the leaf stalks of many Leguminosæ).

Botanische Zeitung. 1877, No. 1. Dr. DeVries, On the Extension of Growing Vegetable Cells by Turgescence. V. Waldheim, A Fungus on Rumex. Nos. 2 and 3, Beyerinck, On Galls. No. 4, Jack, On European Hepaticæ. Continued in No. 5. Dingler, On *Lathræa rhodopea.*

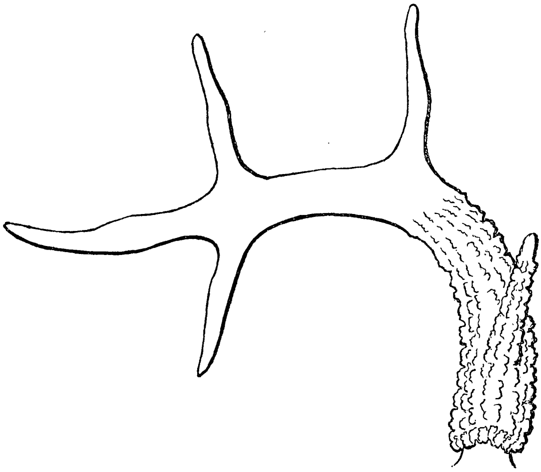
ZOÖLOGY.

THE COMMON CRAB (CARCINUS MŒNAS) AT THE HAWAIIAN ISLANDS. — I desire to direct attention to the crustacean genus *Carcinus*, of which there is but a single species, *mænas.* In 1873 the writer obtained a specimen from the Hawaiian Islands. This is the first well-authenticated instance, to his knowledge, where the species is recorded as coming from Pacific regions. In the Museum of the Academy of Natural Sciences of Philadelphia there is a specimen labeled from Australia, with an interrogation mark. It is found along the whole coast of Europe, from the Baltic to the Mediterranean; it is equally common and as widely distributed along our Atlantic coast. Heller reports having found the species on the eastern coast of South America, and it has likewise been obtained from the Red Sea; and now the Pacific Islands are added as a habitat. In the latter region, however, it cannot be very common, as it has eluded research up to the time mentioned, notwithstanding the fact that these islands have been pretty thoroughly ransacked for this kind of life. It may, however, be considered as cosmopolitan, as having a wider range than any other known species of crab.

What is particularly interesting in connection with its wide distribution is the identity of the species wherever found. Very slight differences can be observed in the specimens coming from these widely separated localities. The differences are not sufficient to constitute distinct species; at the most they would only form varieties. Carcinologists have agreed, however, to ignore the slight geographical variations and to designate them all by the same name.

The difference consists principally in the extent of the granulations on the surface of the carapace, and in the prominence of the front. Our Atlantic-coast crab differs from the European in having the surface more granular, and the teeth of the front somewhat more prominent; in the Pacific specimen the granulations are larger, and the front more projecting when compared with the former. It will be observed that the changes increase in intensity as we travel westward. I do not know how these facts would hold through a large series of specimens; I have had an opportunity of comparison only with a limited number of specimens. The wide distribution of the crab, as is the case with all other forms of life similarly diffused, has had a tendency to preserve the species intact and to prevent a wide divergence from the primitive type. Those natural climatic laws which operate with the greatest intensity on those forms which are confined to restricted habitats are in this case inoperative. — THOS. H. STREETS, M. D., U. S. N.

NOTE ON THE DEFORMED ANTLER OF A DEER. — Dr. W. J. Hoffman, of Reading, Pa., sends me the accompanying figure and description of a malformation of the antler of a deer, probably a variety of *Cariacus Virginianus.* The specimen is said to have been obtained in California some years ago, and is now in the possession of a gunsmith in Reading.



(FIG. 30.) DEFORMED ANTLER OF A DEER.

The figure is taken from the right antler, viewed in position to occasion the least foreshortening of the supernumerary tine. It is drawn on a scale of one-tenth. The tips of the extra prongs are about twenty-six inches apart; distance between their bases, twenty-two inches. Although the various malformations of antlers are almost endless, yet each one has its own interest as an item in the history of the subject; and the facility of pictorial illustration of this class of objects renders extended description unnecessary. — ELLIOTT COUES.

THE BLACK SQUIRREL. — A female specimen of this species (*Sciurus niger*) of the exact color of the mink, the tail hairs light ochreish at the ends, was shot at Rodney, C. W., October 20th, by Mr. James Delaney, of Buffalo. The specimen is in the collection of the Buffalo Society of Natural Sciences, and it is remarkable for its extraordinary color, which is precisely that of the mink instead of the usual black of the species. — A. R. GROTE.

THE RAVEN AND THE SOOTY TERN IN WILLIAMSTOWN, MASS. — Some time since I secured here a fine specimen of the American raven (*Corvus carnivorus* Bartram), the first of its species, so far as I know, that has been captured in this region. Also last September I secured here a good specimen of the sooty tern (*Sterna fuliginosa* Gmelin) which, according to Lawrence, has its habitat in the latitude of Florida and Texas. It was killed near the Hoosac River. — SANBORN TENNEY.

PARTIALITY OF WHITE BUTTERFLIES FOR WHITE FLOWERS. — On a September afternoon I observed in a field where a low white aster and a common golden-rod (Solidago) were abundant, twelve European cabbage butterflies (*Pieris rapæ*) fly directly to the less conspicuous but white aster, and invariably pass by the yellow flowers of the golden-rod. On a following day, however, the white cabbage butterflies on the same spot were seen occasionally to visit the golden-rod, but with an evident partiality for the white asters. On the other hand, the yellow sulphur butterfly (*Colias philodice*) visited the flowers of the golden-rod much oftener than those of the aster. — A. S. PACKARD, JR.

THE PHENOMENA OF DIGESTION IN THE COCKROACH. — In a late paper on this subject Prof. Felix Plateau concludes that the food after being swallowed accumulates in the crop, where it is acted upon by the salivary fluid, which is usually alkaline. There the starchy substances are transformed into glucose; this first product of digestion is here absorbed, and is not met with in the rest of the digestive canal. The valvular apparatus, which does not play the rôle of a triturating organ, allows small quantities of the matter in process of digestion to pass into the middle intestine of limited capacity.

This median intestine, or stomach, as it is usually called, receives the sugar secreted by light glandular cæca, the sugar being ordinarily alkaline, never acid, neutralizing the acidity as the contents of the crop gradually increase, transforming the albuminoids into bodies soluble and assimilable, analogous to peptones, and emulsionizing the fatty portions.

Finally, in the terminal part of the intestine are reunited the residues of the work of digestion, and the secretions of the Malpighian tubes, which are purely urinary in their nature. These researches complete and confirm throughout the results of Plateau's former investigations on the digestion of insects, published in 1874.

THE PAPER ARGONAUT CAPTURED AT LONG BRANCH, N. J. — Some little while ago a fisherman caught a strange object, and brought it on shore. It was the paper nautilus, the first time, probably, this animal has ever come so far north. Dr. Chattle made proposals to have it sent to Dr. Lockwood, which elicited a promise to that effect. But an enterprising genius got hold of the fisherman, and the nondescript was put in a tub of water and shown up at twenty-five cents a head. The animal was at last thrown away. — *Monmouth Democrat.*

The above occurred in August last, while I was out of the State. On my return, to my great grief, I learned that the specimen had been wantonly lost. My informant in the matter is Dr. T. G. Chattle, of Long Branch, a gentleman of generous culture, and good observing ability. From his description I am satisfied it was an *Argonauta*, and very likely, though we may not be positive, the species was *A. gondola*. The animal was kept alive eight or nine days. Sometimes it displayed its arms in a feeble attempt to swim in its narrow confinement. Is not this the first instance of a capture so far north? Query, did this ancient mariner of the poets take it into its head to get into the Gulf Stream, and make us from its old-time seclusion, as some other folks have done, a centennial visit? — S. LOCKWOOD.

A FLIGHT OF BUTTERFLIES. — About the first of October, while seated with a friend on the top of "Pegan Hill," an elevation of some four hundred feet, our attention was attracted to a continuous line of passing butterflies flying in a direct course towards the south, and at the height of thirty or forty feet above our heads. The day was warm and summer-like, with no wind to disturb the flight of the butterflies, which was remarkably steady and even, like the flight of migrating birds, and very unlike the usual zigzag movement of butterflies. We watched them for nearly an hour as they appeared in view from the north and moved steadily onward towards the south. Sometimes they appeared singly, sometimes in groups of three or four, but oftener in pairs, and flying six or eight feet apart. Being anxious to obtain a specimen, that the species might be determined, we made several vain attempts to bring one down by sending our walking-sticks after them. This put them in great confusion, entirely breaking up their line of march, and causing them to dodge rapidly to the right and left, and frequently to drop down several feet; although they continued on at the same rate of speed, they seemed unable to regain their former even flight, but kept up this zigzag motion till lost sight of in the distance. They were apparently one of our largest species, and were visible at least one eighth of a mile as they appeared in sight; it seems an important fact that they did not change their altitude in passing over the hill. We also noticed when descending the hill towards the north that they were flying at the same level till we were so far below them that they appeared but mere specks in the air above our heads, and before we had reached the plains below we had entirely lost sight of them. There was no reason to suppose that the butterflies changed their course in order to pass over this hill, or that the flight did not extend over the surrounding country. Having never seen any notice of the migration of butterflies or their movement *en masse*, it occurred to me that the phenomenon might happen annually, but at such a height as to pass unobserved. The butterflies were of large size and of a dark-brown color, but too distant to enable us to determine their markings. — WM. EDWARDS, South Natick, Mass.

The preceding sketch, received from a correspondent, describes one more instance of the rarely observed migrations of butterflies, and is printed in the hope of drawing forth accounts of similar observations. It is of course impossible to identify the butterfly seen by Mr. Edwards, but the swarming habits and lofty, sailing flight of *Danaïda Plexippus* very naturally suggest this common insect. There are only two other common dark-colored butterflies which would be suspected of moving in such migratory swarms, *Vanessa cardui* and *Eugonia j-album*, and their flight would be different from that described by Mr. Edwards. Instances of the pseudo-migration of *Vanessa cardui* have been recorded in Europe,[1] and of a species of Eugonia (*E. Californica*) closely allied to *E. j-album*, in America (by Dr. Behr; Proc. Calif. Acad. Sciences, iii. 124). It has been suggested that these occasional movements among butterflies, which have been observed, especially in the tropics, in several genera of the larger forms, might be explained by a scarcity of the food-plant of the caterpillar, upon which the female lays its eggs; but this would scarcely be applicable to *Vanessa cardui*, since thistles and mallows — the food-plant of the larva — are abundant and wide-spread weeds. It would be well in observing such moving swarms to collect as large a number of butterflies as possible and determine the sex of each individual and the comparative maturity of the eggs.

It may be added, that when these observations of Mr. Edwards were read before a meeting of the Natural History Society of Boston, Mr. B. P. Mann stated that he once observed in Brazil a similar flight of a species of *Coea* or an allied genus. — SAMUEL H. SCUDDER.

ANTHROPOLOGY.

ANTHROPOLOGICAL NEWS. — The most thorough and successful archæological work done on American soil in the last two years is that of Mr. Paul Schumacher in the Kjökkenmöddings and graves of the extinct races of the Santa Barbara Islands and the mainland. The islands examined were San Miguel, Santa Cruz, San Nicolas, Santa Barbara, and Santa Catalina. The mainland examined was the coast region of Santa Barbara and San Luis Obispo counties, most especially that portion in the vicinity of Point Sal. The Kjökkenmöddings are found wherever sandy ground exists. The deposits in these heaps are so much exposed to the driving winds that many of the objects of interest have been laid bare and carried off by casual visitors. The same winds which denude the shell heaps also expose the large whale's bones which were used by the former inhabitants to separate the bodies in the well-filled graves, and in this way serve as veritable tombstones to mark their sites. Mr. Schumacher opened several of these ancient sepulchres and took therefrom over a thousand skeletons, and with them many articles of ornament or use. The bodies were buried from three to six feet under ground, and sometimes from three to five deep; but it is evident from

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[1] See American Naturalist, x. 610.